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(d) each of said at least one communicating pair is operative to engage[s]
in said communication bidirectionally and independently of the
communication of any other of said at least one communicating pair[.];
and wherein at least one of said electrically-conducting media includes electrical
~~power wiring of a building.~~

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Please add new claims 35-55 as follows:

35. (New) A local area network for data communication, sensing, and
control comprising a plurality of serial intelligent cells interconnected exclusively by
electrically-conducting media into at least one communicating pair, wherein:

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- (a) each of said electrically-conducting media interconnects no more than
two of said serial intelligent cells;
 - (b) each of said at least one communicating pair includes one of said
electrically-conducting media and exactly two of said serial intelligent
cells;
 - (c) each of said at least one communicating pair engages in a
communication exclusively over said electrically-conducting media;
and
 - (d) each of said at least one communicating pair is operative to engage in
said communication bidirectionally and independently of the
communication of any other of said at least one communicating pair;

and wherein at least one of said electrically-conducting media includes telephone
wiring of a building.

36. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

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- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
 - (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
 - (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
 - (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least one of said electrically-conducting media is used for both local area network data and for telephony.

37. (New) The local area network as in claim 36, wherein the local area network data and telephony are combined by frequency-domain multiplexing.

38. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

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- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
 - (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
 - (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
 - (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;
- and wherein at least one of said plurality of serial intelligent cells is powered from an electrical power main.

39. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;

(c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and

(d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least one of said plurality of serial intelligent cells can deliver electrical power.

93 Cont. Sub 127 40. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
- (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
- (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

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concl.*

and wherein at least one of said electrically-conducting media is used to carry both local area network data and electrical power.

41. (New) The local area network as in claim 40, wherein the local area network data and electrical power are combined using frequency-domain multiplexing.

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42. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
- (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
- (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least part of at least one of said plurality of serial intelligent cells is housed within an electrical outlet that allows connections to electrical power and to the local area network.

43. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- 93 Cont.
- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
 - (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
 - (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
 - (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein telephony is digitally integrated into the local area network data.

44. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;

(b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;

(c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and

(d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least one of said plurality of serial intelligent cells includes an address.

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Sub B3 (New) The local area network as in claim 44, wherein said address is assigned via a method selected from the group consisting of mutual assignment and automatic assignment by the local area network.

46. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

(a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;

(b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;

(c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and

(d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least one of said plurality of serial intelligent cells receives electrical power via a dedicated power line.

47. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;
- (c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and
- (d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

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and wherein at least one of said plurality of serial intelligent cells receives electrical power via said electrically-conducting media.

48. (New) The local area network as in claim 47, wherein at least one of said plurality of serial intelligent cells comprises a telephony/data splitter/combiner.

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49. (New) The local area network as in claim 47, wherein at least one of said plurality of serial intelligent cells comprises a power/data splitter/combiner.

50. (New) The local area network as in claim 49, wherein said power/data splitter/combiner comprises an AC power/data splitter/combiner.

51. (New) The local area network as in claim 49, wherein said power/data splitter/combiner comprises a DC power/data splitter/combiner.

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BA* 52. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;

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(c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and

(d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair;

and wherein at least one of said plurality of serial intelligent cells comprises:

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- (a) a line interface;
 - (b) a modem;
 - (c) a control block;
 - (d) a power supply;
 - (e) a payload interface; and
 - (f) at least one device selected from the group consisting of a sensor and an actuator.

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53. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;

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(c) each of said at least one communicating pair engages in a communication exclusively over said electrically-conducting media; and

(d) each of said at least one communicating pair is operative to engage in said communication bidirectionally and independently of the communication of any other of said at least one communicating pair.

wherein at least one of said plurality of serial intelligent cells comprises:

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- (a) a line interface;
 - (b) a modem;
 - (c) a control block;
 - (d) a power supply; and
 - (e) a telephone interface;

and wherein one of said plurality of serial intelligent cells is interconnected to a public telephone network interface.

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54. (New) A local area network for data communication, sensing, and control comprising a plurality of serial intelligent cells interconnected exclusively by electrically-conducting media into at least one communicating pair, wherein:

- (a) each of said electrically-conducting media interconnects no more than two of said serial intelligent cells;
- (b) each of said at least one communicating pair includes one of said electrically-conducting media and exactly two of said serial intelligent cells;